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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* PURVA R. RAJKOTIA

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Appeal 2009-003151  
Application 10/764,175  
Technology Center 2600

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Decided: November 20, 2009

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Before KENNETH W. HAIRSTON, JOHN A. JEFFERY, and  
CARL W. WHITEHEAD, JR., *Administrative Patent Judges*.

JEFFERY, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1-12, 19, 21-25, and 27-30. Claims 13-18 have been

indicated as containing allowable subject matter. Ans. 2; Reply Br. 3.<sup>1</sup> We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

### STATEMENT OF THE CASE

Appellant invented a system for efficiently decreasing the time required to determine whether a call connection between a base station and a mobile station in a wireless network has failed during a call set-up procedure. During call set-up, the base station sends null frames to the mobile station, and the mobile station sends preamble frames to the base station. If the base station detects missing preamble frames, it then increases the power of null frames transmitted to the mobile station. As a result, the more powerful null frames increase the likelihood of a successful call connection between the base station and the mobile station.<sup>2</sup> Claim 1 is illustrative with the key disputed limitation emphasized:

1. For use in a wireless network, a base station capable of releasing a call between said base station and a mobile station during a call set-up procedure, said base station comprising:

a preamble frame detector capable of detecting preamble frames transmitted to said base station by said mobile station during said call set-up procedure; and

a transmit power controller capable of adjusting a power level of null frames transmitted by said base station *during said call set-up procedure*.

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<sup>1</sup> Throughout this opinion, we refer to (1) the Appeal Brief filed August 30, 2007; (2) the Examiner's Answer mailed November 28, 2007; and (3) the Reply Brief filed January 30, 2008.

<sup>2</sup> See generally Spec. ¶¶ 008-10.

The Examiner relies on the following as evidence of unpatentability:

Chun	US 2002/0068586 A1	June 6, 2002
Kim	US 6,418,322 B1	July 9, 2002
Brooks	US 2002/0090947 A1	July 11, 2002
Raaf	US 2004/0029604 A1	Feb. 12, 2004 (filed Oct. 5, 2001)

Appellant's admitted prior art in Figure 3 and ¶ 0043 of the present application ("APA").

1. The Examiner rejected claims 1-3 and 7-9<sup>3</sup> under 35 U.S.C. § 103(a) as unpatentable over APA and Kim. Ans. 4-12.
2. The Examiner rejected claims 4, 5, 10, and 11 under 35 U.S.C. § 103(a) as unpatentable over APA, Kim, and Brooks. Ans. 12-17.
3. The Examiner rejected claims 6 and 12 under 35 U.S.C. § 103(a) as unpatentable over APA, Kim, Brooks, and Chun. Ans. 17-18.
4. The Examiner rejected claims 19, 21, 25, and 27<sup>4</sup> under 35 U.S.C. § 103(a) as unpatentable over APA and Raaf. Ans. 18-22.
5. The Examiner rejected claims 22, 23, 28, and 29 under 35 U.S.C. § 103(a) as unpatentable over APA, Raaf, and Brooks. Ans. 22-24.

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<sup>3</sup> Although the Examiner includes claims 13-15 in this rejection, the Examiner nevertheless indicates that these claims are allowable. *Compare* Ans. 4 and 9-12 *with* Ans. 2. Accordingly, we presume that the Examiner did not intend to reject claims 13-15, and we deem the Examiner's error harmless. We treat the rejections of claims 16-18 similarly since the Examiner likewise indicated that these claims were allowable. *See* Ans. 2.

<sup>4</sup> Although the Examiner erroneously includes cancelled claims 20 and 26 in this rejection (Ans. 18), we deem this error harmless and omit those claims here for clarity and brevity.

6. The Examiner rejected claims 24 and 30 under 35 U.S.C. § 103(a) as unpatentable over APA, Raaf, Brooks, and Chun. Ans. 24.

THE OBVIOUSNESS REJECTION OVER APA AND KIM

Regarding representative claim 1,<sup>5</sup> the Examiner finds that Appellant's description of a known call set-up procedure in Figure 3 and Paragraph 043 of the present application (APA) discloses all of the claimed subject matter except for the base station to have a transmit power controller that is capable of adjusting a power level of transmitted null frames. The Examiner, however, cites Kim for this feature in concluding that the claim would have been obvious. Ans. 4-5.

Appellant argues that while Kim controls power on a forward channel, Kim does not discuss any capability to do so *during the call set-up procedure* as claimed. Rather, Appellant contends, Kim *first* establishes a call between a mobile station and a base station, and *then* controls the forward power according to link quality. Based on this sequence, Appellant reasons that Kim's system must establish a call *before* any power control occurs—a requirement that runs counter to the claimed invention which adjusts power level *during the call set-up procedure*. App. Br. 14-17; Reply Br. 10-12; emphases added.

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<sup>5</sup> Appellant argues the following claim groups separately: (1) independent claims 1 and 7 (App. Br. 14-17), and (2) claims 2, 3, 8, and 9 (App. Br. 17-18). Accordingly, we select claims 1 and 2 as representative of each group, respectively. See 37 C.F.R. § 41.37(c)(1)(vii).

The Examiner, however, notes that claim 1 calls for the transmit power controller to be *capable of* adjusting power during the call set-up procedure. As such, the Examiner contends, the disputed limitation is fully met so long as the prior art controller has the ability to perform this power adjustment. According to the Examiner, Kim has such a power adjustment capability not only during the call set-up procedure, but at any other time. Ans. 25-26.

Regarding representative claim 2, Appellant argues that the prior art does not teach or suggest increasing a null frame power level responsive to detecting at least one missing preamble as claimed. App. Br. 17-18; Reply Br. 12-13. According to Appellant, Kim does not teach or suggest that the power measurement report messages (PMRMs) are preamble frames, let alone that they are transmitted responsive to receiving null frames. *Id.* The Examiner, however, equates Kim's PMRMs to the recited preamble frames, and notes that they are transmitted responsive to receiving forward frames (i.e., "null frames"). Ans. 26.

The issues before us, then, are as follows:

### ISSUES

Under § 103, has Appellant shown that the Examiner erred by finding that APA and Kim collectively teach or suggest:

- (1) a transmit power controller capable of adjusting a power level of transmitted null frames during a call set-up procedure as recited in claim 1?
- (2) increasing the power level of transmitted null frames responsive to detecting at least one missing preamble frame as recited in claim 2?

## FINDINGS OF FACT

The record supports the following findings of fact (FF) by a preponderance of the evidence:

### *APA*

1. The Examiner's findings regarding APA's description of a known call set-up procedure involving a mobile station and a base station (Ans. 4) are undisputed. *See* App. Br. 14-17; *see also* Reply Br. 10-12. We therefore adopt these findings as our own.

### *Kim*

2. Kim discloses a method for forward power control in a cellular system with a base station and a mobile station. The mobile station periodically informs the base station regarding the number of forward frames and erroneous frames via a "power measurement report message" (PMRM). Kim, Abstract; col. 5, ll. 13-20.

3. As shown in Figure 4, a call is first established between the base station and mobile station, and the mobile station reports the PMRM to the base station (step s1). Then, forward power is controlled according to the received PMRM parameters (step s2). Then, the base station checks whether another PMRM is received (step s3). If appropriate, the power control parameters are changed (step s4), and power control is performed according to those parameters (step s2). Otherwise, another call is established between the base station and mobile station (step s1), and the process is repeated. Kim, col. 5, l. 60 – col. 6, l. 5; Fig. 4.

4. If a PMRM is not received from the mobile station within a time period corresponding to 56 frames, the base station changes the power control parameters to increase the digital gain to increase the transmission power assigned to the mobile station. Thus, the forward link is improved, and the mobile station can then receive good forward frames via the improved link. Kim, col. 5, ll. 28-37.

#### PRINCIPLES OF LAW

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). If the Examiner's burden is met, the burden then shifts to the Appellant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *See In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

For patentability, apparatus claims must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78 (Fed. Cir. 1997). Thus, even if a prior art device is used for a different purpose, it will nevertheless meet the claim if it expressly or inherently contains all claimed structural features and is capable of performing the intended function. *See id. Accord In re Simpson*, 2004 WL 1375703, at \*3 (Fed. Cir. 2004) (unpublished) (noting that *Schreiber* affirmed the Board's inherency decision based on *capability*) (emphasis added).



## ANALYSIS

### *Claims 1 and 7*

The first issue before us turns on capability. Simply put, this issue hinges on whether Appellant has shown that the Examiner erred in finding that Kim's controller would have been *capable* of adjusting power level of transmitted null frames during a call set-up procedure as claimed.

It is undisputed that APA discloses a known call set-up procedure involving a mobile station and a base station. FF 1. Although the Examiner acknowledges that APA does not disclose a transmit power controller, the Examiner nevertheless relies on Kim for this teaching. Ans. 4-5.

Although Kim establishes a call before controlling power (FF 3) as Appellant indicates (App. Br. 15-16), we are not persuaded that the Examiner erred in finding that Kim's system would nevertheless be *capable* of adjusting power during call set-up if it were so employed.

Notably, Kim's power control is based on the reported PMRM in conjunction with the call. FF 3. Although this report reflects the most recent measurements that are reported via the call (*see* FF 2-3), we nevertheless see no reason why Kim's system could not control power during call set-up based on, among other things, other measurements (e.g., via an earlier PMRM), parameters, or messages. Nor has Appellant provided any evidence on this record proving that Kim's system would be incapable of controlling power during APA's call set-up procedure (FF 1)—evidence that is crucial to rebut the Examiner's contrary findings. Absent such evidence, and given Kim's power control capabilities (FF 3), we see no

reason why Kim's system would not have been capable of adjusting power during APA's call set-up procedure if it were so employed. *See Schreiber*, 128 F.3d at 1477-78.

Lastly, we emphasize that having the *capability* to perform a particular function is quite different than actually *performing* the function—a distinction made clear by comparing Appellant's independent claim 1 with independent claim 13. Unlike claim 1, claim 13 recites a method of actually performing the steps commensurate with those that the base station is merely capable of performing in claim 1.

Claim differentiation principles alone suggest that Appellant envisioned that claims 1 and 13 have different scope and meaning: otherwise, the claims would be superfluous.<sup>6</sup> Notably, the Examiner's indication that only method claims 13-18 contain allowable subject matter (Ans. 2) speaks volumes as to the distinction between (1) the capability to perform a function, and (2) actually performing the function.

For the foregoing reasons, Appellant has not persuaded us of error in the Examiner's rejection of representative claim 1. Therefore, we will sustain the Examiner's rejection of claim 1, and claim 7 which falls with claim 1.

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<sup>6</sup> "The doctrine of claim differentiation creates a presumption that each claim in a patent has a different scope. . . . The difference in meaning and scope between claims is presumed to be significant to the extent that the absence of such difference in meaning and scope would make a claim superfluous." *Free Motion Fitness, Inc. v. Cybex Int'l, Inc.*, 423 F.3d 1343, 1351 (Fed. Cir. 2005) (internal quotation marks and citations omitted).

*Claims 2, 3, 8, and 9*

We will also sustain the Examiner's rejection of representative claim 2. First, we see no error in the Examiner's position that Kim's PMRM at least suggests detecting missing preamble frames (Ans. 26), particularly since the PMRM (1) effectively informs the base station of the number of forward and erroneous frames (FF 2), and (2) is used as a basis to control the power level (FF 3-4). Notably, Kim's base station increases transmission power when the PMRM is not received for a time period corresponding to 56 frames (FF 4)—a circumstance that at least suggests that frames (e.g., preamble frames) could be missing from the mobile station. As a result, Kim's mobile station can receive good forward frames by virtue of the improved link (*id.*)—a feature that at least suggests increasing a power level of null frames as claimed.

For the foregoing reasons, Appellant has not persuaded us of error in the Examiner's rejection of representative claim 2. Therefore, we will sustain the Examiner's rejection of claim 2, and claims 3, 8, and 9 which fall with claim 2.

OBVIOUSNESS REJECTIONS OF CLAIMS 4-6 AND 10-12

Likewise, we will sustain the Examiner's obviousness rejections of (1) claims 4, 5, 10, and 11 over APA, Kim, and Brooks (Ans. 12-17), and (2) claims 6 and 12 over APA, Kim, Brooks, and Chun (Ans. 17-18). Although Appellant nominally argues these rejections separately, Appellant reiterates the same arguments we considered above regarding the prior art's alleged failure to teach power control functions during call setup. *See* App. Br.

19-20. We are not persuaded by these arguments, however, for the reasons previously discussed. Therefore, we sustain the rejections of claims 4-6 and 10-12 for the same reasons discussed above.

#### THE OBVIOUSNESS REJECTION OVER APA AND RAAF

Regarding representative claim 19,<sup>7</sup> the Examiner finds that APA discloses all the claimed subject matter except for the mobile station having a transmit power control program capable of adjusting a power level of transmitted preamble frames. The Examiner, however, cites Raaf for teaching increasing power of preamble frames responsive to detecting missing acknowledgement messages (i.e., “null frames”) in concluding the claim would have been obvious. Ans. 18-20, 27, and 28.

Although Appellant acknowledges that Raaf teaches increasing power “when there is no reception of an acknowledgement message,” Appellant nonetheless contends that Raaf does not teach or suggest that this increase is responsive to detecting at least one missing null frame as claimed. App. Br. 21; Reply Br. 14-15. In this regard, Appellant challenges the Examiner’s equating Raaf’s acknowledgement message with the recited “null frame.” *Id.*

Despite acknowledging that Raaf teaches increasing power “when there is no reception of an acknowledgement message,” (App. Br. 21; Reply Br. 15), Appellant nevertheless contends that Raaf teaches away from increasing power when an acknowledgement message is not received. App.

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<sup>7</sup> Appellant argues claims 19, 21, 25, and 27 together as a group. *See* App. Br. 21-22. Accordingly, we select claim 19 as representative. *See* 37 C.F.R. § 41.37(c)(1)(vii).

Br. 22; Reply Br. 15. In this regard, Appellant cites Raaf's ability to retransmit a preamble with the same low power when an acknowledgement message is not received in Paragraph 0037 of the reference. *Id.*

The issues before us, then, are as follows:

### ISSUES

(1) Under § 103, has Appellant shown that the Examiner erred in rejecting claim 19 by finding that APA and Raaf collectively teach or suggest a mobile station with a transmit power control program capable of increasing a power level of transmitted preamble frames responsive to detecting at least one missing null frame as claimed?

(2) Does Raaf teach away from this approach?

### FINDINGS OF FACT

The record supports the following additional findings of fact (FF) by a preponderance of the evidence:

#### *Raaf*

5. Raaf discloses a system for initiating communication that gradually increases the power that a mobile station uses to transmit a preamble to a base station. The mobile station's power is gradually increased until:

- (1) a base station receives or detects the preamble;
- (2) the base station sends a corresponding acknowledgement message to the mobile station; and

(3) the mobile station receives or detects the acknowledgement message.

Raaf, Abstract; ¶¶ 0001-02, 0030, 0033; Figs. 1 and 2.

6. As shown in Figure 2, the preamble's calculated ideal power is compared to the maximum and minimum permissible powers. Depending on this comparison, the preamble is transmitted with either (1) the calculated ideal power; (2) a power between the calculated ideal power and the minimum power; or (3) the maximum power. Raaf, ¶¶ 0033-39; Fig. 2 (steps 21-28).

7. In scenario (2) above, when the calculated ideal power is less than or equal to the maximum power, the calculated ideal power is also compared to the minimum power. If the calculated ideal power is less than the minimum power, the preamble power is set to a value between the calculated ideal power and the minimum power. Raaf, ¶¶ 0036-37; Fig. 2 (steps 23, 25, 26, and 28).

8. "A consequence of this step can be that transmission is repeated several times with the same power which is between the calculated ideal power and the minimum power, depending on how far the Preamble\_Initial\_Power determined by the open-loop power control is below the specified minimum power." Raaf, ¶ 0037.

9. An unsuccessful transmission (no reception of an acknowledgement message) could be caused by (1) a collision on a transmission channel; (2) interference; (3) attenuation; or (4) an error in transmitting the acknowledgement message. "This is why it is appropriate to retransmit the preamble with the same low power." Raaf, ¶ 0037.

10. If an acknowledgement message is not received within a certain time period, the ideal power is incremented by a certain amount, and the process is repeated. Raaf, ¶¶ 0041-44; Fig. 2 (steps 29, 211-14, and 23).

#### PRINCIPLES OF LAW

“[W]hen the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious.” *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 416 (2007).

“A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.” *In re Kahn*, 441 F.3d 977, 990 (Fed. Cir. 2006) (citations and internal quotation marks omitted). *See also In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004) (noting that merely disclosing more than one alternative does not teach away from any of these alternatives if the disclosure does not criticize, discredit, or otherwise discourage the alternatives).

#### ANALYSIS

We will sustain the Examiner’s obviousness rejection of claim 19 over APA and Raaf. First, we see no error in the Examiner’s position (Ans. 27-28) that detecting or receiving acknowledgement messages in Raaf at least suggests detecting or receiving associated null frames sent to the mobile station. Although Raaf does not specify the format of this acknowledgement message, we nevertheless see no reason why such a message could not

contain null frames, particularly since the base station sends this message to the mobile station to confirm that the base station received the preamble.

*See* FF 5.

Since Raaf increases the power that the mobile station uses to transmit a preamble when an acknowledgement message is not received (FF 5 and 10), we see no reason why Raaf's transmit power control program would not at least be *capable of* adjusting this power responsive to detecting at least one missing null frame as claimed—including those frames associated with acknowledgement messages. *See Schreiber*, 128 F.3d at 1477-78. Notably, Appellant has provided no evidence on this record proving that Raaf's program would be incapable of this power adjustment.

Nor are we persuaded that Raaf teaches away from increasing power of preamble frames responsive to detecting at least one missing null frame as Appellant argues (App. Br. 22; Reply Br. 15). First, this argument is undercut by Appellant's own admission that Raaf teaches increasing power when "when there is no reception of an acknowledgement message" (App. Br. 21; Reply Br. 15). Nevertheless, as we indicated previously, we find no error in the Examiner's position (Ans. 27-28) that detecting or receiving acknowledgement messages in Raaf at least suggests detecting or receiving associated null frames sent to the mobile station.

Raaf does, however, indicate that a preamble can be retransmitted with "the same low power" when an acknowledgement message is not received due to various transmission factors (FF 9) as Appellant argues (App. Br. 22; Reply Br. 15). But this retransmission is discussed in the context of a particular scenario when calculated ideal power is less than the minimum power. *See* FF 6-9. In this circumstance, the preamble power is



set to a value between the calculated ideal power and the minimum power. FF 7. Raaf explains that this situation can result in repeated transmissions *with the same power* depending on the difference between the initial power and the specified minimum power. FF 8; emphasis added. And if these transmissions are unsuccessful, they can be repeated with the same low power. FF 9.

Despite using the same power, however, these retransmissions would hardly discourage skilled artisans from increasing power responsive to detecting at least one missing null frame, particularly since the very purpose of Raaf is to increase power when acknowledgement messages—and their associated null frames—are not received. *See* FF 5 and 10. As such, the retransmissions in Raaf associated with the intermediate preamble power scenario noted above (FF 7-9) do not teach away from Raaf’s overall power control approach—an approach predicated on increasing power responsive to not receiving acknowledgement messages. *See* FF 5 and 10; *see also Kahn*, 441 F.3d at 990; *Fulton*, 391 F.3d at 1201 (noting that merely disclosing more than one alternative does not teach away from any of these alternatives if the disclosure does not criticize, discredit, or otherwise discourage the alternatives).

For the foregoing reasons, Appellant has not persuaded us of error in the Examiner’s rejection of representative claim 19. Therefore, we will sustain the Examiner’s rejection of that claim, and claims 21, 25, and 27 which fall with claim 19.

THE OBVIOUSNESS REJECTION OVER APA, RAAF, AND BROOKS

Regarding representative claim 22,<sup>8</sup> the Examiner cites Brooks for teaching a detecting a dropped call by using a “fade timer” for timing the period in which a mobile station is unable to receive a usable forward traffic channel in concluding the claim would have been obvious. Ans. 22-23.

Appellant reiterates the previous arguments regarding the power control limitations of independent claim 19, but adds that Brooks allegedly teaches away from these limitations since Brooks’ acknowledgement messages are not null frames, but rather acknowledgements to other specific messages. App. Br. 23-24; Reply Br. 17-18.

The issue before us, then, is as follows:

ISSUE

Is the Examiner’s reason to combine the teachings of APA, Raaf, and Brooks to arrive at the invention of claim 22 supported by articulated reasoning with some rational underpinning to justify the Examiner’s obviousness conclusion? This issue turns on whether Brooks teaches away from the limitations of independent claim 19.

FINDINGS OF FACT

The record supports the following additional findings of fact (FF) by a preponderance of the evidence:

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<sup>8</sup> Appellant argues claims 22, 23, 28, and 29 together as a group. *See* App. Br. 23-24. Accordingly, we select claim 22 as representative. *See* 37 C.F.R. § 41.37(c)(1)(vii).

*Brooks*

11. Brooks' system automatically attempts to reconnect when a dropped call is detected. A mobile station 106 detects a dropped call when:

(1) the received power from the active pilots degrades below a usable level;

(2) the mobile station is unable to receive a forward traffic channel for a period of time (typically 5 seconds); or

(3) the mobile station exceeds the maximum number of attempts to transmit a call, and no acknowledgement is received from the base station.

Brooks, ¶ 0022; Fig. 3 (step 325).

ANALYSIS

We will sustain the Examiner's rejection of claim 22. First, Appellant does not dispute the Examiner's reliance on Brooks for teaching the recited "fade timer" (Ans. 23), but rather contends that Brooks teaches away from the limitations of the *independent* claims (i.e., independent claim 19 from which representative claim 22 depends). App. Br. 23-24; Reply Br. 17-18.

The Examiner, however, did not rely on Brooks for those limitations, but rather APA and Raaf. *See* Ans. 18-20, 27, and 28 (rejecting claim 19 over these references). As such, Appellant's argument is not germane to the reason that Brooks was cited, namely for teaching or suggesting the added limitations of dependent claim 22. *See* Ans. 22-24.

Nevertheless, the Examiner's point regarding Brooks' alternatives for detecting dropped calls (Ans. 29) is well taken. Significantly, the Examiner relies on only one of the these alternatives, namely detecting dropped calls

by detecting *losing the forward traffic channel*—a feature which is said to correspond to detecting missing null frames from the base station (Ans. 23 and 29).

Significantly, this relied-upon alternative is one of three different alternatives for detecting dropped calls in Brooks. FF 11. As such, Appellant’s argument regarding acknowledgement messages (App. Br. 23-24; Reply Br. 17-18) is simply not germane to the Examiner’s cited alternative. *See id.* Rather, Appellant’s acknowledgement message argument pertains to the third alternative which detects dropped calls when the mobile station exceeds the maximum number of attempts to transmit a call, and no acknowledgement is received from the base station. *See id.*

In short, Appellant’s argument is simply inapposite to the Examiner’s reliance on Brooks which is predicated on the forward traffic channel as providing null frames (*see* Ans. 23 and 29)—a position that we find reasonable in any event. As such, we are not persuaded that Brooks teaches away from its combination with APA and Raaf to arrive at the invention of claim 22 as the Examiner proposes. *See Kahn*, 441 F.3d at 990; *see also Fulton*, 391 F.3d at 1201. We therefore find the Examiner’s combination of references in rejecting claim 22 is supported by articulated reasoning with some rational underpinning to justify the Examiner’s obviousness conclusion.

For the foregoing reasons, Appellant has not persuaded us of error in the Examiner’s rejection of representative claim 22. Therefore, we will sustain the Examiner’s rejection of that claim, and claims 23, 28, and 29 which fall with claim 22.

OBVIOUSNESS REJECTION OF CLAIMS 24 AND 30

Likewise, we will sustain the Examiner's obviousness rejection of claims 24 and 30 over APA, Raaf, Brooks, and Chun (Ans. 24). Although Appellant nominally argues this rejection separately, Appellant reiterates the same arguments we considered above regarding claim 22. *See* App. Br. 25. We are not persuaded by these arguments, however, for the reasons previously discussed. Therefore, we sustain the rejection of claims 24 and 30 for the same reasons discussed above.

CONCLUSION

Appellant has not shown that the Examiner erred in rejecting claims 1-12, 19, 21-25, and 27-30 under § 103.

ORDER

The Examiner's decision rejecting claims 1-12, 19, 21-25, and 27-30 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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